

What is Claimed is:

1. A circuit for controlling an output of a slave supply in a defined relationship to a time-varying master signal, the slave supply having a slave output terminal and a feedback input terminal, the circuit comprising:

    a charging circuit for supplying a drive signal to a ramp generator circuit configured to generate the master signal, the charging circuit having first and second current sources for selectively sourcing current to or sinking current from the ramp generator circuit;

    a tracking input terminal for receiving a tracking signal responsive to the master signal;

    a circuit output terminal;

    an operational amplifier that is coupled to the tracking input terminal and that accepts an input signal and a reference signal and outputs an op amp output signal; and

    a third current source coupled to the circuit output terminal that generates output current responsive to the op amp output signal, the output current having a magnitude that forces the output of the slave supply to behave in the defined relationship to the master signal when the circuit output terminal is coupled to the feedback input terminal, and the coupling of the third current source to the circuit output terminal presenting a high impedance to the feedback input terminal.

2. The circuit of claim 1, wherein the reference signal is constant.
3. The circuit of claim 1, wherein the reference signal equals the output of the slave supply.
4. The circuit of claim 1, wherein the third current source is a current mirror.
5. The circuit of claim 4, wherein the operational amplifier is integral to the third current source.
6. The circuit of claim 1, wherein the defined relationship comprises one of the following relationships: coincident tracking, voltage offset tracking, ratiometric tracking, and supply sequencing.
7. The circuit of claim 1, wherein the third current source outputs current from the circuit output terminal.
8. The circuit of claim 1, wherein the defined relationship is user-programmable.
9. The circuit of claim 8, wherein the defined relationship is user-programmable by selection of at least one resistance value.
10. The circuit of claim 1, wherein the defined relationship is a function of a ramp rate of the master signal and a ramp rate of the output of the slave supply.
11. The circuit of claim 10, wherein the defined relationship is a function of a delay between

onset of ramping of the master signal and onset of ramping of the output of the slave supply.

12. A method for controlling an output of a slave supply in a defined relationship to a time-varying master signal, the slave supply having a slave output terminal and a feedback input terminal, the circuit comprising:

varying the master signal at a master ramp rate;

generating current responsive to the master signal;

injecting the generated current into the feedback input terminal of the slave supply;

forcing the output of the slave supply to vary responsive to the master signal and in accordance with the defined relationship; and

presenting a high impedance to the feedback input terminal of the slave supply.

13. The method of claim 12, further comprising changing the ramp rate of the master signal with respect to time.

14. The method of claim 12, wherein forcing the output of the slave supply to vary comprises forcing the output of the slave supply to ramp at the same rate as the master ramp rate.

15. The method of claim 12, further comprising adding a time delay between onset of ramping

the master signal and onset of ramping the output of the slave supply.

16. The method of claim 12, further comprising user-programming the defined relationship.

17. The method of claim 16, wherein user-programming the defined relationship comprises selecting at least one resistance value.

18. The method of claim 12, further comprising generating the master signal.

19. The method of claim 18, wherein generating the master signal comprises generating the master signal from a master power supply.

20. A method for controlling an output of a power supply in a defined manner, the method comprising:

providing a power supply with a feedback terminal, an output terminal and a feedback network coupled between the feedback terminal and the output terminal, the feedback network presenting a resistance between the output terminal and the feedback terminal;

dynamically changing the resistance of the feedback network; and

modifying the output of the power supply responsive to the dynamically changing resistance of the feedback network.